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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,951	06/08/2005	Sung-il Park	GB03 0004US	1515

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PHILIPS ELECTRONICS NORTH AMERICA CORPORATION  
INTELLECTUAL PROPERTY & STANDARDS  
370 W. TRIMBLE ROAD MS 91/MG  
SAN JOSE, CA 95131

EXAMINER

JELSMÁ, JONATHAN G

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

05/28/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/537,951

**Applicant(s)**

PARK ET AL.

**Examiner**

Jonathan Jelsma

**Art Unit**

1795

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 4, and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date 06/08/2005
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Summary***

1. This is the initial office action based on application 10/537,951 filed on 06/08/2005 by Sungi-II Park and Ian French.
2. Claims 1-11 are currently pending and have been fully considered.

### ***Drawings***

3. The drawings are objected to because they contain features that do not show up well when published. Specifically Figures 1c, 5d, and 6a contain features that are too dark to be clearly seen upon publication. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required

corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

4. Claims 4 and 9 are objected to because of the following informalities:
  - a. Claim 4 recites "... a second *semHtransparent* material...", emphasis added. Whereas it should recite "semi-transparent" instead of "semHtransparent."
  - b. Claim 9 recites "... forming *an a* AMLCD including...", emphasis added. Whereas it should recite "... forming an AMLCD including...."Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
7. Claims 1, 3, and 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over CHEN (US 5,817,438) in view of SAKURAI (US 2002/0063825 A1).
8. CHEN teaches a method where a photoresist is coated over a wafer, and a mask is used to define a pattern on the photoresist (column 3 lines 15-18). The photomask comprises a support glass with a layer of partial light shielding material, and a layer of chromium (column 2 lines 47-52). A layer of chromium is also deposited over the semi-transparent material, the chromium layer is the opaque layer, which is over the substrate (column 2 lines 50-51). Portions of the chromium and the partial light shielding material are removed (column 2 lines 52-55). Subsequently layers of the chromium are removed, thus patterning the chromium layer (column 2 lines 56-58).
9. However, CHEN does not explicitly teach that the semi-transparent material has a degree of transparency depending upon the optical band gap of the material. CHEN does teach that the amount of light being transmitted is determined by its thickness (column 2 lines 3-5).
10. SAKURAI teaches using a halftone mask with an optical band gap of 1.8 eV (paragraph 0083). Further, SAKURAI teaches changing the thickness of the semi-transmissive layer in order to adjust the transmissivity (paragraph 0083).
11. At the time of the invention one having ordinary skill in the art would have been motivated to select the degree of transmissivity of the semi-transmissive layer based on the optical band gap as taught by SAKURAI in the patterning method of CHEN in order to achieve the desired attenuation.

12. With respect to claim 7-10. SAKURAI further teaches the method of forming reflective pixels in a reflection type active matrix liquid crystal display device (paragraph 0063). The display further may have multiple levels of thickness (figures 7-8).
13. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over CHEN (US 5,817,438) in view of SAKURAI (US 2002/0063825 A1), as applied to claims 1, 3, and 6-11, and further in view of CHANG (US 6,163,405).
14. Neither CHEN nor SAKURAI explicitly teach that there is a second layer of semi-transparent material formed on the transparent substrate.
15. However, CHANG teaches that there is a second partially transparent material formed on the first partially transparent area, where the transparency of the first area is smaller than that of the second area (column 10 lines 65-67).
16. At the time of the invention one having ordinary skill in the art would have been motivated to deposit a second layer of semitransparent material such as in CHANG in the method of CHEN and SAKURAI in order to form a more complex profile (CHANG column 11 lines 1-5, and figure 20).
17. Further, while CHANG does not explicitly teach a second patterning of the opaque material, chrome, one having ordinary skill in the art would have been motivated to do so in order to achieve the desired pattern shape.

18. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over CHEN (US 5,817,438) in view of SAKURAI (US 2002/0063825 A1), as applied to claims 1, 3, and 6-11, and further in view of HATANO (US 5,233,450).

19. Neither CHEN nor SAKURAI explicitly teach using an hydrogenated silicon-rich silicon nitride  $\text{SiN}_x\text{:H}$  with  $x$  less than 1. SAKURAI teaches an amorphous silicon material with an optical band gap of 1.8 eV (paragraph 0083) for the attenuated material.

20. HATANO however teaches using an hydrogenated amorphous silicon nitride, in order to have a larger optical band gap in order to form the attenuated layer (column 12 lines 38-40).

21. At the time of the invention one having ordinary skill in the art would have been motivated to use the hydrogenated silicon nitride attenuated layer as taught by HATANO, in order to have an attenuated material with a large optical band gap, in the method of CHEN and SAKURAI with the optical band gap of 1.8 eV as taught by SAKURAI. The optical band gap of 1.8 eV would require the  $x$  in the  $\text{SiN}_x$  to be less than 1.

### ***Conclusion***

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Jelsma whose telephone number is (571)270-5127. The examiner can normally be reached on Monday to Thursday 7:00 a.m. - 5:00 p.m.

23. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on (571)272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

24. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JGJ

**/Mark F. Huff/  
Supervisory Patent Examiner, Art Unit 1795**